(Mobility) Fixing the Taiwanese bicycle industry: the production and economisation of cycling culture in pursuit of accumulation

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Abstract

There have been recent calls in mobilities literature for greater engagement with how mobility regimes are shaped and governed at different scales. In relation to cycling-related mobilities scholarship, there are very few accounts situating cycling within broader bio-political and political–economic processes. This paper seeks to redress this absence, situating contemporary formations of cycling culture within processes of capital accumulation and economisation. The research is based upon a series of interviews with industry stakeholders, participant observations at cycle events and analysis of policy documents and news media in Taiwan from 2015-2017. We demonstrate that in the last ten years there has been a drive to create cycling subjects in the Taiwanese cycle industry, mass events and through public bike sharing with the loosely strategized goal of projecting an image of a cycling culture it is hoped will be advantageous to the domestic bicycle industry. We demonstrate how this emergent process of fixing works through economization of social cycling practice, itself reliant on processes of division, classification and subjectification. We also show how the cycling subjects and cultures thus formed constitute qualculative framings that facilitate ongoing commercial re-evaluation of Taiwanese Brand manufacturers by other actors within the industry.

Keywords: cycling, mobility, bio-politics, economisation, political-economy

1. Introduction

"If Taiwan was not only exporting bicycles, but also exporting bicycle culture, then there's little doubt that they'd be selling even more bicycles around the world. Time for the Bicycle Kingdom to live up to its name." (Mayne quoted in Auchapt 2013:n.p)

This paper takes as its focus attempts to create a cycling culture in Taiwan over the past 10-15 years, and the role of that culture in reinvigorating its domestic bicycle industries. For decades Taiwan has been a hub of global bicycle and component manufacture yet it has not been known for its cycling culture: numbers of cyclists whether recreational, tourists or commuters have been low to non-existent. Concurrent with a decline in the performance of its cycle industry, over the last 10-15 years Taiwan has increasingly tried to present a new image of the Nation as "Cycling Paradise" - an image that seeks to position Taiwan as a hub of cycling culture as well as manufacturing and design innovation and excellence. In order to aid its strategy of distinction, the 'soft' story that Taiwan increasingly seeks to tell the world is that in line with established US and European Bike Brands, it not only makes bikes, but it *does* bikes. Crucially, the re-enchantment of place and commodity embodied in the shift to Cycling Paradise rests on this entanglement being more than just an image; it relies on it being performed at a deeper cultural and societal level.

As a result, through a number of events and initiatives Taiwanese bike industry employees, citizens, and visitors are increasingly encouraged to cycle with the aim of performing cycling culture. We argue that these attempts to encourage cycling in Taiwan represent the economisation (Caliskan & Callon 2009) of cycling culture. Whilst cycling remains a social practice, we argue that its contemporary formations (in Taiwan and many other countries, c.f Spinney 2016) have been 'spawned by the functioning of markets' (Callon 2007:146). The main contribution we make with this paper is to bridge the gap between individual/collective performance and economy by demonstrating how cycling as a social practice is both produced and rendered economic in different spheres and at different scales - within the workplace and tradeshow; within sporting events; and within everyday commuting – as part of a metaphorical fix to problems of accumulation in the cycle industry.

In doing so we draw upon, synthesise and contribute to a range of literatures. Primary amongst these are bio-political processes of ordering, objectification, and subjectification (Dean 1996; Cramshaw 2012; Foucault 1982, 2003, 2010; Lemke 2001, 2015; Tyfield 2014; Van Der Duim 2016) that constitute a broader process of economisation (Callon et al 2002; Callon & Caliskan 2009, 2010; Cochoy 2007, 2008).

By describing the process of economisation at work, we also contribute to debates regarding mobility and governance (Andreae, Hsu & Norcliffe 2013; Baerenholdt 2013; Manderscheid 2014; Schwanen 2017; Soderstrom 2014; Sheller & Urry 2006; Zuev et al 2018), particularly in the way we place these literatures in conversation with work on political-economy (Harvey 1982, 1989; Jessop 2002, 2004; Tyfield 2015) to position the production of cycling culture as a form of metaphorical 'mobility fix' (Minn 2013; Spinney 2016).

The structure of the paper is as follows: In section 2 we outline the rise and fall of Taiwan's domestic cycle industry as a matter of concern, leading to the establishment of strategies including the promotion of Taiwan as 'Cycling Paradise'. Following on from this in section 2.1 we introduce our theoretical framing. We begin by introducing the concept of 'mobility fix and its distinction from other forms of fixing; we then go on in section 2.2 to introduce concepts of economisation, ordering and subjectification that guide our empirical analysis. In section 3 we present our empirical data and analysis. In section 3.1 we discuss how the comportment of employees within Taiwanese bike firms has been problematised as contributing to poor brand image, subsequently becoming the target of attempts to get employees cycling. In section 3.2 we discuss the enrolment of citizens and promotion of sporting and leisure events as qualculative frames where brand image can be requalified. Finally in 3.3 we discuss the emergence of Public Bike Sharing in Taipei City and its role in producing cycling culture and projecting an image of the 'global cycling city' similar to other more established cycling nations. We conclude in section 4 by foregrounding the links between bio-political processes of objectification and subjectification in relation to economisation, and the status of particular events as qualculative framings where economisation occurs as a form of culture-led 'metaphorical' fixing. At the same time we caution against totalising narratives, suggesting rather that the success of such meta-activity remains emergent, uncertain and partial.

2. Fixing the cycle industry: a matter of concern

According to TAITRA (Taiwan External Trade Development Council) there are now approximately 821 companies in the Taiwanese bicycle industry, clustering largely in the Taichung-Changhwa area (see Figure 1). Most of these are smaller Original Equipment Manufacturers (OEM) producing parts for foreign and domestic firms with a handful of notable Original Brand Manufacturers (OBM). Foremost amongst these are two Taiwanese companies – Giant and Merida – who began their journeys to become brand manufacturers in the 1980s, and have successfully transitioned to become two of the world's leading bicycle brands with respectively 10% and 4% of global market share for high end bicycles, and 50% and 25% of the high-end Chinese market (Credit Suisse 2014:3). In the last decade, smaller Taiwanese companies such as Kinesis and X-Fusion have also made the successful shift to OBM.

Fig 1: Distribution of bicycle and component manufacturers (Source: Department of Statistics, 2015)

To give a sense of the importance of the bicycle industry in the national context, a 2017 report shows that foremost amongst Taiwan's top 20 brand manufacturers are tech companies like Asus, HTC and Trend Micro. Computer specialist Asus remains Taiwan's biggest brand with a value of US$1.7 billion (Interbrand 2017:n.p). However, it is notable that bicycle and component manufacturers Giant (5th), Merida (11th) and Maxxis (13th) all place highly in this list (Salmonsen 2017:n.p). Hence whilst it is fair to say that the national economy is far from dependent on the bicycle industry, with a combined value of US$1.25 billion for the top three bicycle brands (ibid) their contribution is significant.[i]

The Taiwanese bicycle industry grew rapidly from the 1970s, consolidating throughout the 1980s with an increasing global presence. However exports declined in the late 1990s due to global recession and domestic currency appreciation, with problems further compounded in the early 2000s as many manufacturers sought to take advantage of lower production costs by moving facilities to China. The net result was a reduction in export units from around 10 million in the early 1990s to under 4 million

in 2003 (Credit Suisse 2014:5). More recently (see Table 1), total export numbers between 2012 and 2018 have continued to decline but the dollar value per unit has risen dramatically reflecting a successful repositioning of Taiwan as a producer of high-end bicycles.

Table.1: Total bike exports and value 2012-2018 (Source: Taiwan Transportation Vehicle Manufacturers Association)

A further problem for Taiwanese cycle manufacturers has been the relative lack of a domestic market for its products. Despite its industry dominance, Taiwan has not been known for its cycling culture[ii]: numbers of cyclists whether recreational, tourists or commuters have been low to non-existent. In 2011 less than 5% of the population owned a bicycle with only 4.6% riding with any regularity, a figure virtually unchanged by 2016. In the capital Taipei City, the mode share of cycling is little better with 5.1% using the bike in 2015 compared to 26% using motorcycles. With such low domestic demand, Taiwan's bicycle manufacturers generally export in excess of 80% of their products (Chen et al 2009: 209) with (for example) only 10% of Giant's sales being domestic (Chu 2009:1063).

Given the forces converging on it, the Taiwanese cycle industry has been pessimistic of its chances of survival: "…moving into the 21st century, all the booms are over. There is a lacking (*sic*) of innovative new products, and the bike markets (*sic*) not only matured and oversupplied, but also start to shrink and losing (*sic*) it's vitality, the SBRs (Specialty Bicycle Retailers) are losing share to the mass merchandisers, and the only game in town is lower-price, lower quality, no profit" (http://www.taiwanexcellence.com.tw/ind/A-team.aspx: n.p, accessed 25/04/17).

The 'matter of concern' (Caliskan & Callon 2010) arising can be seen to be constituted of three main elements: the desire for production to stay within Taiwan to maintain jobs and product differentiation (Brookfield et al 2008:16); a corollary need to increase exports and margins by repositioning the industry in the higher value Original Brand Manufacturing (OBM) market (Credit Suisse 2014:5; Henderson, 2003:37); and the creation of a bigger domestic cycling market.

Whilst these concerns might appear clear 'after the fact', as Callon (2007) has argued, such matters of concern are "…characterized by deep *uncertainties*: very little knowledge is available on their nature, their causes, possible solutions and directions to be explored." (146). Accordingly the concerned groups often 'organise research collectives' that tend to, "…reveal a series of problems or issues that can be imputed to the functioning of markets and technosciences, and to their modes of development or organization" (Callon 2007:146). Congruent with Callon's prognosis, in order to address the matter of concern, a group known as the 'A Team' and comprised of manufacturers led by Giant, Merida and KMC was established in 2002[iii] (Brookfield et al 2008:15). Over the last 15 years the A team has sought to reinvigorate the domestic bike industry principally in three main areas of production efficiency, product development, and market intelligence.[iv]

However, any attempt to fix problems of accumulation and any corresponding resurgence in competitiveness has not been a solely technical or organizational accomplishment, nor even a coherently strategized one. Indeed, as Brookfield notes, many of the technical production techniques innovated by the A Team were quickly adopted by supplier networks in China. Some in the industry recognised that efficiency and innovation alone would not enable a long-term re-invigoration of their fortunes and that something more was required to enhance brand reputation and justify higher prices. Accordingly, alongside an emphasis on efficiency and R&D there has been a turn toward a cultural-economic mode of ordering through the encouragement of a broader cycling culture within Taiwan.

Speaking in 2015, Anthony Lo (Giant CEO) stated, *"as bicycle industry we are proud that we are also exporting the cycling experience today […]. Taiwan converted from cycling island to cycling paradise. Only ten years ago people called Taiwan the cycling desert"* (Anthony Lo, Giant CEO – quoted in Van Schaik 2015:n.p). Here Lo explicitly links the importance of positioning Taiwan as a 'paradise' where people 'do' cycling – as opposed to a 'cycling desert' - to the success of its bicycle industry. Such a 'strategy' echoes Scott's (2000) argument that to be competitive requires amongst other things 'positive symbolic associations between place and industry.' The danger that Lo highlights is one raised by Henderson (2003) when he states that the "cultural desert [is] associated with imitation" (41). Hence to differentiate oneself from the cultural

desert requires not only making bikes but *doing* bikes: it requires the firm to be seen to be embedded in a broader cycling culture in order for reputation to be enhanced. Industry actors in the A Team realised that the solution - the 'fix' - for the matter of concern in this instance ultimately hinged around a project to promote the 'doing' of cycling as central to authenticity/passion as a brand quality, and to bring that quality to the attention of foreign customers so that it could figure in their evaluations of the industry's/ firm's reputation and justify the higher value of its products. This clearly requires the commodity of the bike to be entangled with cycling as a social practice and the cultural geographies of Taiwan as a place (Pike 2009, 2011).

2.1 From spatial fix to mobility fix

It is here that we want to elaborate upon the concept of 'fixing'[v]. In a number of books and papers Harvey (1982, 1989, 1991, 2001) has argued that falling productivity leads firms/ cities/ nations to seek spatial and temporal fixes. In its simplest form a spatial fix is the movement of capital to new places to take advantage of 'idle' labour supply in order to increase productivity and maintain growth. Thus fixing can take the shape of a more 'literal fix' involving the long-term emplacement of capital in a physical form; or it can be a more 'metaphorical fix' characterized by improvised and temporary solutions reliant on spatial strategies and/or spatial reorganization to overcome particular capitalist crises (Jessop, 2004:4). The programme of activities proposed by the A Team exemplifies the latter due to its improvised nature, and as we shall argue, its reliance on the creation of a spatiality informed by mobility.

In a 2016 paper, Spinney began to set out the case for seeing contemporary urban cycling formations as a kind of 'mobility fix'. The crux of his argument rests upon the inability and reluctance of municipal administrations to embark on new rounds of spatial fixing to enhance the efficiency of road transport systems. The key problematic here is that as Jessop states, "…capital has to build a fixed space (or "landscape") necessary for its own functioning at a certain point in its history only to have to destroy that space (and devalue much of the capital invested therein) at a later point in order to make way for a new "spatial fix" (2001e: 25; cf. 1996b: 6). Spinney (2016) argues that one outcome of the excessive cost (alongside environmental, heritage and health arguments) of spatial fixing of roads infrastructure in cities is the emergence of cycling

as a mobility fix to try and speed up circulation times of goods and capital with minimal spatial fixing.

Another element of the mobility fix highlighted by Spinney (2016) is its role in producing new forms of labour. Harvey points out that to realize a more 'efficient' transport system requires a normalisation of new forms of mobility that govern the production and reproduction of labour (Harvey, 1982:382). Accordingly as Cerny (2006:690) notes, the competitive 'state' is one that attempts to incorporate competitiveness into everyday social reproduction including practices of working, commuting and leisure. In line with this and drawing upon Foucault, Spinney (2016) argues that the promotion of urban cycling policy can be seen as bio-political because governing activities become focused on reshaping the conduct of both individual and collective as "…'lean', 'fit', 'flexible' and 'autonomous'…" (Lemke 2001:203). As a result, Spinney argues that contemporary formations of cycling practice must be viewed as a 'mobility fix' because they represent "…a way of governing that works primarily through the production of new modes of mobile comportment rather than the production of space" (2016:455).

Such a reading compliments the work of authors like Baerenholdt (2013), also inspired by the work of Foucault to explore mobility as, "…first and foremost a way of governing, a political technology" (20). This is partly in response to what both he and Manderscheid (2014) describe as a fixation in mobilties scholarship on the micro-sociology and phenomenology of mobile practices, at the expense of the macro issues of how these practices make societies (Baerenholdt 2013:20; Manderscheid 2014:605). Baerenholdt coins the term 'governmobility' to describe not only the ways in which societies are governed through connections, but to highlight the importance of studying processes of subjectification that internalize prevailing mobile moralities (Baerenholdt 2013:29/32).

However, there is a further facet of the mobility fix that we want to draw out in this paper. That is the role of mobility – and cycling specifically – in producing and enhancing cultural capital. Harvey has argued that capital builds fixed 'landscapes' in certain points in history, only to have to destroy that same space later on to make way for a new 'fix' (Harvey 2001:25). Whilst Harvey envisaged landscape as a primarily physical and spatial phenomena, we argue that it can also be conceptualised as a metaphorical

cultural-geographic resource used to define the qualities of a place and the entities located within it. As a sizeable place-branding literature attests, industries and places build and project images that constitute a cultural landscape with the goal of reinvigorating industry and place (Andersson 2014; Andreae et al 2013; Eshuis et al 2014; Julier 2000, 2005; Koch 2018; Larner et al, 2007; Pike 2011; Scott 2000; Van der Duim 2014; Vuignier 2016).

Despite its ubiquity, mobility remains an important but largely ignored component of such metaphorical fixing. Inspired by Julier (2005) we ask, "how does [mobility]…contribute to providing official or non-official 'stories' and 'ways of doing things' that, in turn, fashion specific aesthetic outlooks for a place?" (871). In posing this question we seek to understand local culture – in this case cycling culture - as a vital resource contributing to the creation of appropriate 'industrial atmosphere' and the re-enchantment of commodity (Julier, 2005:873). Our argument thus seeks to build upon Jessop's assertion that as capital searches for fixes it extends commodity relations into areas of life subject to the logic of accumulation (Jessop 2002:29). In particular, we develop Jessop's point that "…capital can seek to impose an economizing, profit-seeking logic on other systems, even though their activities remain largely non-commercial" (ibid).

2.2 Theorising the mobility fix: Ordering performers, suppliers and customers within a qualculative apparatus.

Applying the idea of fixing to contemporary formations of cycling, two key questions emerge: firstly, how is a social practice of cycling first inculcated where little if any previously existed?; and secondly, how is its practice circulated as a quality that enables it to form part of a broader revaluation and 'fixing' of the cycle industry? In order to provide a framework to understand the idea of mobility/culture as a quality that can be manipulated to fix accumulation we turn to cognate literatures from economic sociology and governmentality. In particular we draw upon three closely related post-structural concepts: ordering, subjectifying and economising to provide a framework for understanding the process of mobility fixing.

Foucault has argued that survival of capitalist systems in late modernity depends upon the refashioning and entanglement of 'extra-economic' social and cultural domains as an object of the economy: "what were previously extra-economic domains are now rendered 'economic' and are colonized by criteria of economic efficiency" (Lemke, 2001:202). Caliskan & Callon use the term 'economisation' to describe the "…processes through which activities, behaviours and spheres or fields are established as being economic…" (Caliskan & Callon 2009:370). Drawing upon work in ANT we argue that economisation is first and foremost a process of establishing and ordering qualities (Latour 1992; Law 2001; Hummel & Van der Duim 2016).

Callon & Muniesa (2005) describe a market as "…a collective device for the evaluation of goods" (1245). Central to this process of evaluation are processes of qualification and re-qualification which continually align product features to consumer interests and enable evaluation to take place (Callon et al, 2002:200-1). Importantly, the list of what Callon et al term qualities is not fixed and thus for any firm "…the ability to modify the list of qualities is a strategic resource since it is a matter of positioning the good in the space of goods" (ibid). The 'good' in our account is the reputation of the firm in relation to others, and the quality in question is the extent of its embeddedness in cycling culture. Callon et al suggest that re-qualification processes fall into two categories: organised (such as staged events where economic agents are explicitly defined as being involved in the process), and the gradual and unconscious (such as a conversation with a family member) (201). Congruently, one of our key contentions here is that the development of a broader cycling culture can be conceptualized as a quality because it is something that can be manipulated in the hope that customers will believe that a product/ brand has greater authenticity and ultimately value.

A first step in producing cycling culture requires the creation of cycling subjects. As Caliskan and Callon (2009) suggest, institutions play an important role in this process by enhancing or bringing into existence the competencies that may exist in human beings, thus enabling the 'economic formatting of individual behaviours' (Caliskan & Callon 2009:380). Institutions in this reading are responsible for presenting and framing practices in particular ways through what Foucault termed 'objectification', itself constituted from three closely related processes: dividing practices; classification; and subjectification. The process of objectification refers to a set of knowledge practices

that construct 'truths' by specifying ideal and appropriate 'normative' bodies and behaviours. Dividing practices refer to social and spatial practices of categorisation that seek to separate out and distinguish one group from another; scientific classifications refer to the ways in which through representing them in a certain way, subjects are objectified as consisting of a specific set of characteristics; subjectification refers to the ways in which human beings actively turn themselves into subjects by being incited to internalise moral obligations (Curtis & Harrison 2001; Foucault, 1982, 2010; Kristensen 2013; Madigan 1992).

Caliskan and Callon (2009) state that, "what is at stake in economisation is, precisely, to identify and characterise entities that have been economised" (Caliskan & Callon 2009:391). We argue that the first step in doing so in this instance is for a practice (and an attendant population) to be differentiated and separated as more or less worthy through dividing and classifying. Accordingly, in our analysis we focus on the activities of institutions surrounding cycling and urban mobility including cycle manufacturers, transportation and tourism officials, and activist organisations[vi] to understand how they represent and reframe cycling as a social practice that *should* be performed in contrast to less desirable practices and subjectivities.

It is important at this juncture to make a distinction between two related terms connecting governed bodies as both individual and part of a population: anatomo-politics and bio-politics (Foucault, 2003; 2007). The former refers to a series of "body-organism-discipline-institutions" that concerns "the individualizing technology of power…basically targeting individuals…to the point of anatomizing them" and that discipline bodies and behaviour through different institutions of education or training (Foucault, 2003:250; 2007:160). The latter relates to a series of "population-biological processes-regulatory mechanisms-state" that "is centered on governing, modifying and reproducing the mass effects or modern life of population (Foucault, 2003, p. 250; 2007). Such a distinction does not produce a dichotomy, rather, anatamo-politics represents the mechanisms through which bio-political objectifications are entangled and adjusted as the 'meshes of power' for both the disciplinary practices of human bodies and regulatory control or modification of population (Foucault, 2007; Lemke, 2015). What this means in effect is that the ways in which particular practices and

events both entrain and broadcast competencies, values and dispositions becomes an important focus of study[vii].

As this suggests, creating spatio-temporal framings (Callon & Law 2005) through which cycling subjects emerge and are encountered by others is central to the process of economisation because it is through such encounters that images become tangible and performances are witnessed and judged by other actors. Caliskan & Callon (2010) use the term 'socio-technical agencement' to refer to this process defined as, "…a combination of heterogeneous elements that have been adjusted to one another." (9). Callon & Law (2005) at pains to point out that while these agencements/framings precisely enable judgements and measurements to be performed as to the value of objects, this does not rely on rendering them amenable to quantitative calculation. Instead, these framings are important primarily as spaces that enable relations to emerge that allow qualitative, inter-relational judgements to be made, or 'qualculations' (2005:720). This opens the way to understanding events as processes where the value of something is judged in relation to whatever else is positioned manipulated and arrayed within a particular framing (ibid). Accordingly, in this paper we focus on the ways in which cycling culture is produced and circulated as a quality through both organised requalification events (such as cycling events) and more gradual and unconscious exhortations to take up cycling in everyday life (such as the implementation of PBSS).

3. Mobilising working bodies: cycling employees and brand requalification

3.1 The importance of cycling culture to brand value

Taiwan is often referred to as *"…the 'Kingdom of the Bicycle';* reknowned globally for *"…pumping out billions of dollars worth of…bicycles to be ridden on city streets, bike paths, and highways throughout the world – everywhere, it seemed, but on the island where they were made."* (Brown, 2016: n.p). Indeed, writing some twenty years ago, Royal stated that, *"Taichung is probably the island's only city where one is likely to spot [cyclists] and they're probably members of the company's professional team training for the Tour de Taiwan race"* (Royal 1999:58).

More recent accounts from our interviewees back up Royal's observation that cycling as a practice has been all but absent within cycle industry organisational culture: "*The time when we were at Giant, we always suggested our bosses to ride our own bicycles to promote, yet they were just playing golf…they considered that cycling is the activity of the lower class at that time."* (Mr Su, senior cycling advocate, Feb 2015). This sentiment was echoed by a member of the leading Taiwanese cycling advocacy organisation, the Taiwan Cyclist Federation. She noted that when she worked for Giant in the 1980s, *'all the executives played golf and were not interested in cycling'*, partly because of Giant's predominantly inward OEM focus (Lih, TCF, Feb 2015).

This representation is reinforced by Phil Latz, Editor of Australian 'Bicycling Trade' Magazine, who paints a picture of employees at past Taipei International Bike Shows as disinterested in doing cycling (Latz in Brown 2016:n.p). Given that the, "trade show is a societal space used by many exhibitors to establish trust in their trading relationships" (Skov, 2006 in Andreae et al 2013:194) it is a space where we would expect the product - cycling - to be embodied and performed by employees in their labour, yet Latz paints a somewhat different picture: *"The show was dominated by suit-and-tie wearing chain smokers…the hall was filled with smoke, and the people in Taiwan's cycling industry...well, they didn't seem like the sort of people who cared much about cyclists."* (Latz in Brown 2016:n.p). Whilst as Benedict (2012) notes, *"…it seems obvious that the top brass in any cycling company should be an avid cyclist…many of the largest companies are simply run as businesses, where the widgets could be interchangeable with any other widget as far as many executives are concerned"* (Benedict 2012:n.p).

The image of cycle industry employees in these accounts is that of the suit-wearing, golfing, smoking executive who has no real interest in the product they are selling (beyond the profit that can be made), and certainly whose bodily comportment sits at odds with a normative Western European and American image of the cyclist as active and healthy. Certainly the subject described in these accounts contrasts markedly with the image projected by North American and European Brand manufacturers where firms are represented as being populated by people passionate about riding bikes.

Many of the mid-level firms based in California for example like Ibis, Ellsworth and Santa Cruz are testament to this – all started by cycle enthusiasts for cyclists as the founder

of Santa Cruz states: "*a bunch of bike geeks making what we believe to be the best products available…we've got some really fast guys working here"* (Davis and Rogers, 2012:109). Even the larger Brands such as Specialized, SRAM and FOX, whilst much more corporate in their outlook were started by enthusiasts in a way that (for example) investment banks never were. Despite their size for example, Specialized's HQ in the USA still has a lunchtime bike ride for employees and a 'pump' track[viii] on site (Privateer, 2013), suggesting that its employees perform and embody the values of the company through the practice of cycling: *"…you only have to watch the lunch ride roll out or check out the pumptrack to see how passionate everyone is about bikes…*" (79).

The benefit of this entanglement with cycling was summed up by one Marketing manager who stated that doing cycling allowed suppliers and consumers to 'feel the temperature of the company' and in doing so 'trust and believe'. As he explained, it is through doing cycling that the firm can be seen as more than 'just a factory or a company' (HoM, Merida, May 2017). Evidently, the performance of cycling within a firm is seen to be an important quality because of a beneficial association between those making the product with the use of the product.

This distinction between companies that 'did' cycling and those that didn't was also spatialised and extended to the region and its citizens more broadly. The founder of Santa Cruz bikes for example stated that, "*from a credibility standpoint, people take us more seriously because we're in Santa Cruz"* (Privateer, 2013:87). In contrast, Merida's marketing manager felt that Taiwan as a place contributes less symbolic capital to their brand: "…*in Taiwan, traditionally our position in the marketing image is lower than say California for example"* (HoM, Merida, May 2017). The distinction here is not only between employees who do or do not ride, but is extended to whether the region in general has a cycling culture. Certainly the Eastern (non cycling) and Western (cycling) images of the employee/ citizen as possessing different characteristics constitutes a bio-political dividing and classificatory process of objectification (and othering) which as Madigan (1992) has stated is both social and spatial (266) and aimed at governing a 'population' – in this case employees of the firm and citizens more generally.

Producing the cycling employee: classifying and subjectifying

For those firms that are or aspire to be brand manufacturers, the absence of cycling culture within the Taiwanese cycle industry was articulated as a problem with a number of interviewees noting a shift towards cycling amongst employees in the bicycle industry: *"The shift of Giant Manufacturing's attitude toward bicycles started from the European branch's suggestion" (Mr Su, TCF, Feb 2015).* When asked why he thought cycling culture had become important for Giant, he suggested that it was, *"because Giant now sees the bike with a global view" (ibid).* Another former Giant employee corroborated this stating that: *"neither Giant nor the government saw the potential in cycling culture twenty years ago: more recently however they sensed it was a business opportunity for a global company so, they make the change"* (Ms He, TCF, Feb 2015).

Such was the change that from 2007 Giant Chairman and Founder King Liu required *"…all employees in Giant's department of domestic sales, divided into several groups to travel around the island by bike by the end of the year"* (Liu, 2007:n.p). This requirement of employees to ride was also echoed by Chung Moon-Cheung, V.P of Merida: "*We encourage employees to ride around the island to punch in because the mileage is also regarded as one of the regulations to employees…..If our employees have a healthy body, it is a great help for our company to promote new projects……have a common topic can also improve relationships between colleagues*." (Moon-Cheung 2012:n.p).

What we first want to emphasise here are the institutionally driven processes of objectification and regulation where employees are classified and divided as either healthy or unhealthy; cooperative or uncooperative; innovative or not based upon whether they move in the 'right' way. The cultural practice of specifying what constitutes the 'normal employee', or as Foucault writes the 'subject who labours', is an example of a socially produced specification (Foucault, 1982 in Madigan 1992:267). What is interesting here is how what constitutes a normal or desirable employee is re-specified as the subject who cycles as part of their labour. Whilst the Taylorised worker for example was one whose comportment was entrained to fit into pre-determined and tightly choreographed sequences of action to be performed within the staging of the workplace (Callon 2007:145), the modern worker and citizen is one encouraged to become equipped to perform a set of economically beneficial actions beyond the workplace. Accordingly, rationalities such as self-care and self-improvement "become

matters of concern for the space and time adjoining institutional sites" (Millington 2014:482). Indeed how the employee moves is seen to enhance not only their human capital – as a more collegiate and innovative worker - but also enhances the image of the firm because – in line with the examples of US brand manufacturers - the 'doing' of cycling confers the symbolic quality of 'passion for cycling' onto the firm: part of a metaphorical cultural 'fix'.

Secondly, we bring attention to the fact that the idealized image of the cycling employee realized in this bio-political process is brought into being through the practice of riding around the island. The ride around the island can be conceptualized as an anatamo-political subjectification event where the employee learns and embodies their new duty as the subject who cycles as part of their labour. As we elaborate in the next section, numerous interviewees made it clear that the ride round the island (alongside other events) was central to the mission to institutionalise cycling culture within the top firms.

However, it is not enough just to creating the cycling employee; in order to economise and realize the value embodied within this subject requires these employees to be brought into a 'qualculative' (Cohoy 2004) frame with other industry actors so that the quality of passion for cycling can be witnessed and requalification can occur. Cochoy argues that a qualculative frame is a tool for both 'defining and collecting information on markets' where the value of a good or brand is constantly 'redefined and repositioned' (Araujo 2007:222). It is no accident that efforts to encourage cycling have focused on employees in Sales, Marketing and Design functions given that it is these employees that US and European suppliers will have the most contact with and in particular will be seen at events such as the Taiepei International Cycle Show, and other mass events. Certainly it is our argument here that such sites are essential to the project of economisation because they bring actors together in a way where the social practices of the cycling employee can be seen and therefore play a role in repositioning and redefining what constitutes brand identity.

3.2 Economising cycling culture beyond the firm: Cycling citizens, organised events and requalification

Whilst trade shows are evidently an important site where actors come together and qualculations are performed, a more important arena is that of mass cycle events. These events serve a dual purpose: in the first instance they attempt to ensure that the desired attributes (such as health, fitness, sustainability) can be 'entangled' with elements of everyday practice in order to make them legible to participants. Secondly, it is through these events that industry customers get to 'feel' whether the performance of cycling projected by the industry runs more than skin deep: is it mere performance that stops at the boundaries of the firm? Or is it a national passion?

Taiwan hosts a growing series of cycle related events happening throughout the year aimed at both professional and recreational cyclists. Whilst these began as stand-alone events, since around 2010 the sport-focused Taiwan Cycling Federation (TCF) has cooperated with the Ministry for Tourism and Communication (MoTC) to expand events beyond a sports focus and bring them together under the badge of the 'Taiwan Cycling Festival' to give greater coherence (Ms He, TCF, Feb 2015). In 2015 for example the Cycling Festival ran from October 30th to November 22nd (double the duration of the previous year) and was centred around four main events, *"Taiwan King of the Mountains Challenge"; "Formosa 900"; "Sun Moon Lake Come Bikeday"; and "OK Taiwan Bike and Horse Riding Tour"* alongside related cycling activities in 10 different counties.

Both industry and goverment have played a part in developing these events. King Liu (Founder of Giant Bicycle), for example, *"…made it his mission to change the culture of cycling in Taiwan…To do this, he instituted several major rides, and the company continues to develop rides and events to bring more people into the fold"* (Benedict 2012:n.p). This mission to get citizens cycling was also echoed by the Marketing Manager of Merida in relation to the Chunghua Classic 100km where since its inception in 2010 participation has risen from 300 to 8000 in 2017 (HoM, Merida 25/05/17).

Government and NGO officials were more explicit in framing these events in moral terms. According to the MoTC the main purposes of the cycling festival are, *"being internationally renowned", "promoting the cycling tourism industry" and "lifestyles of health and sustainability (LOHAS) of the whole people" (*MoTC 2015, CH3:IV). This was

echoed by interviewees in the TCF and Taipei City Government. Mr Su from the TCF for example stated that *"through these events…we wish to show this is a very good activity and sport…If you do the cycling, you don't need to go to church, since you must be very nice to environment, people and yourself…" (Mr Su, TCF, Feb 2015.* More explicitly, a senior official in the Taipei City Government noted that*, "these cycling events look quite simple; just people riding bikes. However, for government, they can act like a comprehensive, safe and economic programme to achieve multiple targets with low cost and social rightness. No one can say holding this event is wrong or immoral" (Mr Lo, TCG, Jan 2017).*

What is evident again in these accounts are institutionally driven bio-political processes of classifying, dividing and subjectifying that work at a population level to facilitate economisation. Firstly, there is a discursive dividing and classifying where those who participate are considered 'socially righteous', and good to the 'environment, society and themselves'. As Jessop suggests, through such events, "…citizens are induced to to make judgements on educational, medical or scientific matters…" (2002:29) and invited to, "…monitor and conduct themselves according to their interpretation of set cultural norms" (Madigan 1992:268). Such events are therefore central to the process of evaluating cycling as 'socially right' because as Araujo (2007) has stated, "…there is no possible calculation without designating and classifying objects within frames" (222).

Following on from this discursive re-framing, the practice of cycling at these events is anatamo-political because it serves to entrain particular cultural norms. Both Taiwanese and foreign cyclists take part in an 'idealisation' of (Western) road racing culture that serves to 'provide congruity regarding how mobility should be performed' (Van Der Duim, 2005:969; see also Spinney 2006) giving them a chance to learn how to use their bodies in a specific way by riding alongside professionals[ix]. As such these events are a key way in which citizens collect information on new ways of being in the hope that existing arrangements will be reshaped and desirable modes of comportment will be entrained (Araujo 2007:222). In contrast to previous theorisations of passive and over-determined subjects, here, "…the consumer is considered as an active, interactive being, in the grip of emotions and drives, capable of taking part in experiences of which she is the heroine. […]. What is at issue here is the creation of a

subjectivity, of a form of active and interactive individual…" (Callon 2007:148). As this suggests and in line with Foucault, the alignment of practices with economic goals requires agents who are not driven by forces 'above or beyond them', but "…who are technically and mentally equipped…with the very cognitive and material devices that enable them to participate as economic subjects." (Caliskan & Callon 2009:389).

But what is the importance of this to the industry? How does providing an arena for citizens (and employees) to take up the social practice of cycling translate into economic advantage? We argue here that the primary importance is that the cycle industry uses these mass performances as a backdrop that supports the narrative of doing cycling, in particular the fact that it is practiced beyond the boundaries of the firm. The key way in which this is done is for firms to ensure their foreign customers are present and/or participating in these events: *"…normally we invite our foreign customer. […] Sometimes they also invite their dealers in Taiwan […]. It is a change shifting from the organisation to the culture…we try to earn maybe not money, but we can earn a reputation…It is so important to show them not just the manufacturing side, but some other soft side about cycling culture"* (HoM, Merida 25/05/17). Cycling events thus represent an 'organised' process of re-qualification (Callon et al, 2002:201). As Calsikan & Callon (2010) have stated, in order for something to be valued requires agencies capable of valuing them – created here through cycling events; and for different calculating agencies to be brought together - in this instance by the Taiwanese manufacturers bringing their customers together with cycling citizens/employees to witness and take part in the performance (14). As such cycling events represent a key site where "what we recognise as the economic is accomplished" (Slater, 2002:239) because they become 'qualculative' transactional spaces where industry actors are invited to re-evaluate industry reputations in a framing which now includes the collective cycling practices of employees and citizens.

Merida's HoM went on to elaborate the importance of the affective nature of these encounters to the success of this reframing: *"we have to…get them to experience in reality, otherwise when they tell Specialized, why trust a brand from Taiwan? 'It's a company, it's a factory why pay 3000 euro for your bike? So it's important that they can come, they can see it by themselves, and they can touch, they can feel the temperature*

of the company. If they can really trust then they believe." (HoM, Merida, 25/05/17). Key in this narrative is the relationship between the bio-political and symbolic. The doing of cycling becomes a tangible quality by being seen, felt, heard and experienced. It is this immediacy beyond any distant image or staged trade show that enhances 'reputation' because it confers a temporal pedigree and spatial depth to the narrative that Taiwan's manufacturing is embedded within a national cycling culture.

The successful performance of cycling in such transactional spaces relies on more than just the performances of its citizens: for this performative landscape to be successful, a suitable staging for events must first be created. The most notable manifestation of this is found in plans to develop a 940km network of regional bikeways between 2003-2007[x] at an estimated cost of NT$1.517 billion. The plan maps out nine regional networks of bike paths incorporating elements of 'high architecture' (such as bridges and ancient buildings) and natural landscapes in both coastal and foothill settings[xi] (Monica Kuo, Velo-City Field diary, 01/03/16). After completion (due end of 2018), work would be carried out to join these up to form a national network, and also to integrate them with rail travel and the hotel network (MOTC 2005:34-35).

The point we want to emphasise here is that the events we have discussed rely on the creation of the cycle network to enrol domestic and foreign publics in performing cycling culture. As the DNGOIA stated, *"It is expected that the around the island bicycle trails will become better and better and Taiwan will be turned into a "cyclists' paradise" so that more and more foreign cyclists will be able to ride bicycles and explore the beauty of Formosa."* (DNGOIA, 2017:n.p). Thus the cycle network is a key element of the socio-technical agencement; enabling new cycling subjects to emerge and contributing to the image of Taiwan as a cycling nation. As Cramshaw argues, for individuals to invest in themselves, requires the construction of an infrastructure that facilitates self-management (Cramshaw 2012: 200).

The idea surfaces again that fixing the cycle industry is dependent upon a greater immersion in cycling than simply producing good products, or attending trade shows: trust, reputation and brand differentiation are built through embodying and practicing cycling not just within the firm, but in citizens and infrastructure more generally. Evidently processes of qualification and subjectification spill out from institutional confines into the everyday activities of the general population (Millington 2014) where

particular elements of life are organised, regulated and conducted with the goal of requalifying corporate reputation (Foucault 2003:246-247). The key point we emphasise here is the metaphorical nature of fixing where a loosely strategised production and presentation of a leisure cycling culture becomes a key means through which value is created and problems of accumulation are 'fixed'.

3.3 Public bike sharing systems and the production of utility cycling culture

Having focused on leisure and sport cycling so far, in this final section we discuss a much more gradual and unconscious way in which utility cycle culture is entrained and promoted in the shape of Taipei's 'You Bike' Public Bike Share System (PBSS) implemented and managed by Giant Bikes. We demonstrate how the implementation of PBSS (hopefully) enables the ensuing backdrop of utility cycling to be considered as part of any valuation of the cycle industry by foreign customers, largely because of Taipei's (and Xinyi district's) role in representing Taiwan in projected images of it as a place.[xii]

King Liu, founder of Giant Bikes has publicly stated that, *"Taipei, with its car and motorbike-clogged streets, is the biggest obstacle to making Taiwan a "cycling island."* (Ramzy 2013:n.p). Here (in a continuation of the logic behind the leisure events in the previous section) Liu foregorounds a bio-politics by making the link that unless the population of Taipei embraces cycling, the image of Taiwan as a cycling island – and hence the extent to which the cycle industry will be seen to be embedded in cycling culture - will be much weakened. In order to remedy this the then Mayor of Taipei City confirmed the policy of 'cycling in daily life' in 2007 and asked the DoT to create a relaxed and safe cycling environment in Taipei: *"In 2008, the DoT under the Taipei city government delegated Giant manufacturing to work on the pilot project for establishing public shuttling bike system and operations management* (TCG Deputy Commissioner Jan 2017). The central Xinyi district became the pilot zone launching on March 11th 2009. Following this, You Bike[xiii] was rapidly rolled out city-wide and by late 2017, there were 391 You bike docking stations containing over 15,000 bikes."[xiv]

It was evident from interviews with public officials and NGOs that the purpose of the You Bike scheme should be to create 'active' cycling subjects rather than 'sedentary' scooter subjects (which currently dominate Taipei's traffic): *"You Bike…seeks to change*

scooter riders and drivers, making them give up riding their own scooters and cars and take public transportation and cycle…." (You Bike, Oct 2016). Here PBSS becomes part of the social infrastructure serving to inculcate self-management and construct, "reflexive health entrepreneurs, willing and able to manage their own wellbeing under the guidance of 'distant' experts" (Cramshaw 2012, 200).

Implicit within this are dividing practices that make an othering distinction between scooter riders and cyclists, and classifications that impart particular characteristics to each group. This was evident in how key policy officials talked about scooter riders in negative terms. Scooter riders were for example classified as inefficient in their use of space: *"as a scooter rider goes to work or to school, a parking space would thus be occupied whole day…a parking space of an You Bike is much smaller than that of a scooter…"* (TCG Senior Transport Official, Jan 2017); as dangerous by the Mayor of Taipei City: *"…scooters are the problem to solve anyway because scooter fatality occupies up to 80% in the total traffic fatality. It is a dangerous transportation tool…"* (Ko Wen-je, 2016); and environmentally harmful: *"Imagine Taipei without scooters: the air and the city space are free from the threat of PM 2.5 and from noise pollution… it's going to be a healthy city"* (TCG Official, Jan 2017). Thus, the scooter rider and PBSS user are objectified as not only different, but also as representing respectively less or more worthy and desirable forms of mobile conduct. In the process citizens are invited to take up cycling as a moral duty because of its positioning within specific discourses of health and sustainability. Such a strategy is remarkably similar to those found in other arenas of re-qualification. Azimont and Araujo (2007) for example recount through an analysis of soft drink category reviews, the way in which manufacturers attempt to shape the qualities of products by positioning them within specific discourses such as weather patterns, global instability and health (853-855).

Similarly to organized cycle events, PBSS also performs as an intermediary 'anatamo-political vehicle' for subjectification through which it is hoped the scooter-citizen can transform themselves into the more active and desirable cycling-citizen. The role of PBSS in the process of subjectification was noted by many policy officials. For example, in a report to the TCG secretariat, the Mayor of Taipei City stated that the goal of PBSS was, *"…to create an atmosphere of cycling and make bikes a part of the public's everyday life"* where *"bikes are not merely tools of transportation but also new*

lifestyles." (Secretariat of Taipei City Government 2014). Another interviewee from the Department for Transportation went further suggesting that through PBSS, *"we hope people to experience and realize the advantages of cycling; it is more than selling bikes but promoting a lifestyle…that advocates energy efficiency and carbon reduction, physical and mental health, family harmony, and peace in society…"* (Mr Lo, Nov 2016). In common with the broader National Cycle Network, PBSS is explicitly positioned as providing a physical and social framing through which citizens learn and internalize their duties to move in certain ways.

Unlike cycle events where foreign suppliers are invited to directly attend events, the ways in which PBSS and any corresponding cycling culture in Taipei feature in any re-qualification of the reputation of brand manufacturers is more diffuse and uncertain. The bringing together of Taipei's emergent PBSS cycling culture with industry reputations to enable qualculation relies in large part on the status of Xinyi as the most projected global representation of Taiwan. Numerous interviewees noted the potential benefit of creating cycling citizens through PBSS for enhancing the global image of the city: "*Through promoting green transport, we would step by step make Taipei City one of the world-renowned Green capitals"* (Secretariat of Taipei City Government, 2014). The importance of producing cycling subjects was echoed by a key cycling advocacy organisation: "*Mobility decides the image of the city – how we are perceived by visitors – and the way we move determines the way we live in the city"* (Lin in Van Mead 2016:n.p). Indeed, according to one official, it was the wish to include cycling culture within the globally projected image of the city that led to the You Bike pilot scheme launching in Taipei City and Xinyi specifically: "*many foreigners travel frequently to Xinyi Planning District…it is the embodiment of a global city"* (Former Transport Commisioner for Taipei City, March 2016). As this suggests, it was no accident that PBSS was piloted in Xinyi; rather it was an explicit strategy because Xinyi is the district that has come to represent Taiwan on the international stage so it became important to have bikes seen in any images of this District.

Beyond this indirect projection of PBSS to a global audience, Xinyi is also important to any qualculative framing as the district that is home to the Taiwan International Convention Centre, one of the main venues for the Taipei International Cycle Show where foreign customers are most likely to be brought into direct contact with the city's

transportation and hence its PBSS and commuter cycling culture. This was also the venue for the 2016 *Velo-City Global* conference, another event where Taipei invited the international cycle industry elite to see its utility cycle culture in action.

The importance of these images of the cycling city to the bicycle industry was noted by Merida's Head of Marketing who suggested that despite such schemes having no direct connection with their company, in encouraging cycling culture they still have the potential to enhance its own brand image: "*I believe that PBSS contributes to the image of Cycling Paradise. We have similar You Bike system in 5 or 6 counties so I think that does help: consumer or foreigner come to Taiwan and they can see that (PBSS) and that can help to position us as cycling paradise"* (HoM, Merida 25/05/17). Evidently it is hoped that people will view Taiwan (and its cycle industry) differently because its citizens cycle, with one official going on to emphasise You Bike's Symbolic role as, *"…a showcase, just for show; it doesn't have any real effect on transportation…."* (Former Transport Commissioner for Taipei City, March 2016).

The process at work is again one of socio-technical agencement where different materials, infrastructures, discourses and actors are brought together in the hope that evidence of utility cycling culture can help to convince buyers that Taiwan's industry is embedded in cycling culture. It provides an example of the ways in which, "judgment is often distributed across time and geographical space. It flows, unfolds, and reflects local specificities (Callon & law 2005:721). It is in this sense that the everyday practice of cycling is rendered economic because it becomes a diffuse quality that qualculating agents will hopefully use to judge the 'value' of the industry. Scott (2000) has argued that key to the success of industries is the ability to capitalise on 'the symbolic cachet of their urban locations' (Scott, 2000 in Larner et al 2007:383). What is notable here is that this symbolic cachet is seen to arise from cycling as a form of movement and the positive symbolism associated with it in late modernity as a green, healthy, sporty and 'hip' form of transport (Jennings 2015; Stehlin 2014; Johansson & Liou 2017). Whilst success of PBSS has been limited, without it there would be even lee utility cycling practiced in Taipei and thus no landscape of cycling to be considered as part of any qualculation of value. For the bike industry in particular, the fact that an image of Taipei as a cycling city is projected is important to any possible 'fixing' because it contributes

further to a landscape of mobility - 'cycling paradise' - where its industry is seen as embedded within a culture of everyday cycling.

4. Conclusions

In this paper we have demonstrated the importance of cultures of mobility to questions of economy in a number of ways. Firstly, responding to Manderscheid's (2014) call to focus empirical analysis on the production and shaping of mobility regimes (605), we have demonstrated the ways in which multiple actors, materials, discourses and institutions are brought together in unstable processes of socio-technical agencement (Caliskan & Callon 2009; 2010) to produce cycling as an increasingly important form of mobility in a specific international context. We have shown how processes of classifying and dividing contribute to the creation of cycling subjects both within and outside the firm. Following on from this, we have demonstrated how the process of subjectification works through emplacement in specific frames (industry events, leisure events and projected global images) where the subject is both entrained and enrolled in the performance of cycling culture. As such these events and the actors produced to perform them can be conceptualized as marketing tools where industry professionals both define and collect information on markets and relevant qualities. By bringing the Taiwanese firms together with the performance of cycling it is hoped that industry customers will re-qualculate the value of the brand from one that simply makes bikes to one that it is embedded in a cycling culture with a corresponding revaluation of the firm's products. The significance of this to theories of economisation is to provide a case study illustrating how a social practice is rendered economic through processes of ordering that align citizens, workers, infrastructures, events, media and global images. As such it exemplifies Callon & Law's contention that spatio-temporal framings are distributed across time and geographical space (721).

Following on from this, and complementing Spinney (2016) this case study provides an example of how cycling culture can be theorised as a form of fixing in contemporary capitalist economies. Building upon Harvey's (1982, 1989, 2001) notion of spatial fix and Julier's (2000, 2005) notion of designscape we demonstrate here the metaphorical nature of fixing in that mobility is utilised to build a diffuse form of cultural capital that

Taiwanese industry actors attempt to harness to fix problems of accumulation. Rather than create a physical landscape that produces more productive flows of goods or workers, the fix in this instance works through producing and/or bringing a cultural landscape to the attention of industry customers. Accordingly the problem of poor brand image caused by being disembedded from the relevant cultural milieu is - it is hoped – 'fixed' through the association of the brand with the doing of cycling. By foregrounding the role of mobility in the creation of cultural capital – in this example that of cycling – we demonstrate the need to take mobility seriously as a form of capital (Kaufmann et al 2004).

Third and finally however, we also foreground the precarious nature of this undertaking, positioning it as an ongoing accomplishment comprising multiple actors: evidently we cannot explain the contemporary emphasis on producing cycling subjects as solely the result of 'state' or 'market' actors or as producing some kind of inevitable and totalising 'end-state'. The involvement and agendas of the stakeholders interviewed in this paper – cycle activists, industry marketers, product designers, government officials, business leaders - would suggest that as much as we can see cycling as a kind of fix, it is evidently not one that is fully strategized and coordinated on the part of all actors, rather it is of the metaphorical kind as described by Jessop (2004): 'second best' solutions characterized by their improvised and temporary nature that at best partially and provisionally seek to overcome the contradictions and dilemmas inherent in capitalism and regularize accumulation in the long term (13). Congruently, any resulting ordering must be seen not as fully strategized or fixed in the sense of a collective (an assembly of people who have decided to join some form of common organization) but rather a 'collectif' characterised as an "…emergent effect created by the interaction of the heterogeneous parts that make it up'' (Callon and Law 1995:485). Contemporary manifestations of cycling exemplify these kinds of messy, mobile and multi-level forms of governance. Accordingly we emphasise the contingent and fragile nature of such orderings: whilst we have discussed here attempts to create cycling subjects and exhibit them to enable qualculation, those same subjects resist attempts to shape their conduct as life constantly escapes attempts to 'subject' it.

[i] The bicycle industry currently employees around 33,000 people with fixed assets of around US$4.9 billion and makes up 1.2% of Taiwan's industrial sector (Department of Statistics (2015).

[ii] What constitutes a cycling culture remains a matter of debate (Aldred & Jungnickel 2014) yet most would agree that it requires cycling to be embedded in all aspects of daily mobility (recreational and reproductive); have widespread support from society and government; be something done by a significant proportion of the population; and be accomplished with safety and ease (generally seen as requiring traffic calming measures and cycle-specific facilities).

[iii] Early statistics from 2005 suggested some success with A-Team members seeing growth of 14 percent in exports; average unit prices increasing to $346; and sales volumes up by an average of 36 percent (Brookfield et al 2008:16).

[iv] Of most relevance here is the A Team's marketing operations embodied in the "Taiwan Industry Image Enhancement Project (IEP). This aimed "…to enhance the innovative image of Taiwanese industry, creating the country of origin effect and assisting Taiwanese branded companies in raising brand awareness and consumer preference, as well as increasing sales revenue and expanding the sales base in the targeted markets, including in Taiwan, the EU, USA, Japan, Mainland China, India, Indonesia, Vietnam, Philippines, Russia, Brazil, UAE, Egypt, Myanmar, Turkey, and Mexico." (http://www.taiwanexcellence.com.tw/ind/about-us.aspx: n.p, accessed 25/04/17). Supported by the Ministry of Economic Affairs and implemented by the Taiwan External Trade Development Council (TAITRA) the IEP provides value-added promotion through a variety of integrated marketing and communication activities (conferences, exhibitions, digital marketing etc) (ibid).

[v] As Harvey (2001) states, the term 'fix' has multiple meanings: it can refer to the notion that something is placed and secured in a particular location and cannot be moved or changed (24). It can also refer to the idea that there is a problem in normal functioning that needs to be 'fixed' to return to its 'normal' state (ibid). Following from this is a third related meaning where a chronic problem (such as drug addiction) is ameliorated through 'getting a fix' (ibid). This last metaphorical meaning is important primarily because as Harvey attests, it suggests that any 'fix' will be temporary as the 'craving soon returns' (ibid). All three meanings have in common the idea that a problem can be identified and solved (at least in the short term).

[vi] Between 2015 and 2017 we conducted 20 in-depth interviews lasting between 30 minutes and two hours with a broad section of stakeholders including Merida, Giant Bike Foundation, Taipei City government, National Development Council, Ministry of Transport, Local Transportation Authorities, Taiwan Cycling Federation, and Community Leaders. These institutions were selected because of their role in the production of cycling culture through different activities, events and schemes. We also gathered data (ethnographic and secondary) on a range of events such as the Tour de Taiwan cycle race, King of the Mountains Challenge, Chunghua Classic 100, Taiwan Bike Festival, Taipei International Bike Show, Velo-City 2016 Cycle Conference, Bike Taiwan Cycle Route, and Taipei's 'U Bike' PBSS. Some of these such as the Velo-City Conference (2016) are one-off events whilst others such as U Bike are 'permanent'. Equally some events such as the International Bike Show take place only in Taipei City whilst others such as the Bike Taiwan Cycle Route are evident in many areas of the nation.

[vii] Whilst Foucault did not focus on mobility in great detail in his writings on bio-politics or indeed anatamo-politics, it evidently represents an area of social life that is amenable to the kinds of problematising and dispersed management he discusses. For example Foucault theorized the ways in which the subject could be mobile as a potential investment on the part of the individual (Foucault 2010:230). Accordingly when he suggests that a key locus of disciplinary power is 'control over daily rhythm' (Foucault 1995: 167) it is implicit that mobility with its attendant spatial, temporal and rhythmical orderings (Edensor 2010) can be conceived of as a pre-eminent sphere of anatomo-politics and bio-politics where certain mobile hybrids are legitimised, marginalised or excluded.

[viii] A pump track is a short undulating circuit associated with BMX and mountain biking that is used by riders to improve their technical skills.

[ix] The 2017 edition for example gave entrants the chance to ride alongside Pro-Team professionals Valerio Agnoli and C.K. Feng.

[x] Much of the inspiration for this network has been from the successful Shimanami Kaido cycle route in Japan. As an official from the Ministry of Transport confirmed, numerous government departments (including education, tourism and transport) alongside businesses like Giant have been involved in defining the route around the island (Mr Su, MOT, May 23rd 2017).

[xi] This route was inspired by the Japanese Shimanami Kaido route (part administered by Giant who provide bike rentals) which runs 60km across a series of islands in the Seto sea connecting the main island of Honshu with Shikoku.

[xii] We acknowledge that the implementation of PBSS addresses multiple 'matters of concern', chief amongst these are environmental quality; urban congestion and global city image. Whilst PBSS is less central to the mission of achieving 'Cycling Paradise', as Liu's comment implies, it is still important because of its role in helping to construct a diffuse 'landscape of mobility' which it is hoped will form a quality in any qualculation regarding the embeddedness of the cycle industry.

[xiii] The potential of the You Bike system to be rolled out in other cities has taken a major setback since 2016 with the phenomenal success of 'PBSS 2.0' dockless systems from Chinese companies such as Mobike and Ofo (see for example Spinney & Lin 2018).

[xiv] Information from: http://taipei.youbike.com.tw/cht/f32.php

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